



ARTISTS USING SCIENCE & TECHNOLOGY

"Vlem" is the primordial stuff out of which
the universe emerged

May 1983

Vol. 3 No. 1

Getting DOWN to Earth

A GEOLOGY FIELD TRIP

JUNE 4 AND 5

with CLYDE SPENCER, M.A. Geology, San Jose State University

RESERVATIONS NEEDED: SPACE IS LIMITED!

*Geology is the most visual of sciences,
both in its raw data and its coded information.
The process of change in the animate is traced in fossils,
that of the inanimate in minerals, rocks and the landscape itself.
Its scope extends to other planets. Colorful maps,
charts, and cross-sections encode its insights.*

Itinerary

Saturday, 8:30 am. Meet at Stanford Shopping Center
to form car pools.

10 am-5 pm. Half Moon Bay and Montara. Several
short ($\frac{1}{2}$ mile) hikes.

Overnight. Pigeon Point Lighthouse hostel. Stay
over if you can (fee).

Sunday morning. Exploring nearby beaches.

Reservation form is on back page.

Information: Donna Van Dijk, (408) 354-4056



"a fractal landscape that never was" — Mandelbrot ©1982 W. H. Freeman

CALENDAR

Now Until June 5 ARTTECH AND ART BY HAND show at Euphrat Gallery includes works by Tlem members. Gallery located on DeAnza College campus. Curator is looking for robots to make the May 11 reception at the gallery "wierd". If you can help call Jan at (408)996-4836. Other stunts welcome.

* May 7 * YLEM BUSINESS MEETING, Euphrat Gallery, DeAnza College, 21250 Stevens Creek Boulevard, Cupertino. Take Stevens Creek exit from 280. The gallery is just east of the largest building, Flint Center. The ArtTech show is there so come to look as well! If our meeting goes into overtime, we will adjourn to a nearby restaurant.

May 14 1 pm GRAPHICS GATHERING, Louden Nelson Community Center on Center Street in Santa Cruz, will meet to discuss computer culture, its language, values, community, and implements.

May 14 1:30 pm PROPOSAL WRITING WORKSHOP FOR ARTISTS will be at the San Mateo Arts Council in Twin Pines Park at 1219 Ralston Avenue, Belmont. To register mail \$10 check payable to the San Mateo Arts Council to the above address. For more information call (415)593-1816.

May 14-15 9 am-5 pm INNER REACHES OF OUTER SPACE - a symposium with Roddenburg, Herbert, LeQuin, and astronaut Schweickart will be at the Palace of Fine Arts, San Francisco. Tickets are \$100. (\$80 for students and seniors) For information contact C. G. Jung Institute, 2040 Gough, SF 94109, (415)771-8080.

May 18 until June 8 AIRBRUSH PAINTINGS BY YLEM MEMBER GEOFFREY CHANDLER showing at Illuminarium Gallery, 650 East Blithedale, Mill Valley. Gallery hours: Wednesday - Saturday 11am until 5:30pm; Sunday 12-5 pm.

May 19 7:30 pm ART CRITICISM is topic of seminar by Pro Arts. Seminar will feature Ron Glavin, Jan Butterfield, Joan Hugo and Charles Share. Call 763-7880 for reservations and information.

May 21 All day ART AND MICROCOMPUTERS will be topic of seminar series. From 9am to 12pm, four software packages for art applications will be demonstrated. Admission \$5.00. At noon there will be a showing of "EM", a video portrait of David Em. Its free and bring your lunch. From 1-2:30 pm seminar titled Children's Art On and Off the Computer will be offered for children grades 1-6. Admission \$5.00. Enrollment is limited. For reservations mail checks payable to Euphrat Gallery to the gallery at DeAnza College, Cupertino CA 95014.

* June 4 & 5 * YLEM FIELD TRIP - meet at 8:30am at Stanford Shopping Center for field trip of San Mateo County Coast. Can stay overnight at Pigeon Point Lighthouse(fee). Reservations necessary
* See reservation form on page 5.

June 18 7:30pm NATIONAL COVERAGE FOR WEST COAST ARTISTS will be title of seminar sponsored by Pro Arts. Featuring Whitney Chadwick, Thomas Albright, Robert Atkins, and Peter Selz. Call 763-7880 for reservations and information.

OPPORTUNITIES

1984 CADRE Conference COMPUTERS IN ART, DESIGN, RESEARCH, AND EDUCATION, a national computer graphics conference, will be held by three South Bay colleges in January 1984. Get in on the ground floor by offering to help. Both individuals and Tlem should approach area galleries with proposals for many will plan computer exhibits at the same time. For information: CADRE c/o Art Department, S.J.S.U., San Jose, CA 95192.

Now LEONARDO MAGAZINE, a 16 year old journal of all arts using science and technology, is celebrating its recent move to San Francisco. Subscriptions, \$30, cost less than previously reported here. They seek articles by artists. For information: Leonardo c/o Art Department, S.F.S.U., 1600 Holloway, San Francisco 94132.

Apply now CREATECH, A COMPUTER EXPOSITION, needs commercial exhibitors for their July 2-4 show in the San Jose Convention Center. The booth fee is low and they plan to saturate the area with event publicity. For information call (408)293-9722.

Now SUBMIT PAPERS FOR DIGICON '83, an international conference on digital arts that will be held in Vancouver. For information write: Computer Science Programs, UBC Centre for Continuing Education, 5997 Iona Drive, Vancouver, BC Canada, V6T 2A4.

Proposal deadline May 13 ALASKAN PERCENT FOR ART seeks proposals for an exterior work and a suspended or wall-hung interior work for the Fairbanks International Airport. Budget \$110,000. For prospectus write Christine D'Arcy, Alaska State Council on the Arts, 619 Warehouse Ave., Suite 200, Anchorage, AK 99501, (907)279-1558.

Slide deadline June 1 CALIFORNIA STATE FAIR - CALIFORNIA WORKS will award \$14,075 to winners of the functional and nonfunctional art categories. Limit 2 entries. \$6.00 entry fee. Write California State Fair California Works, PO Box 15649, Sacramento, CA 95852 or call (916)924-2015.

Deadline June 1 13TH ANNUAL MARIN COUNTY NATIONAL FILM COMPETITION needs 16mm films that were completed after January 1, 1981. Entry fee \$10. Awards: \$1,000 for independent; \$900 animated; \$800 for student. For more information write Marin County Fair and Exposition, Fairgrounds, San Rafael, CA 94903.

July 25-29 SIGGRAPH '83, a computer graphics conference, will be held in Detroit. For more information write SIGGRAPH '83, 111 East Wacker Drive, Chicago, IL 60601.



TLEM (Trem-Tum): 1. The primordial stuff out of which the universe emerged. 2. An emerging group of artists who believe that science and art enhance each other and human understanding.
 TLEM Chairperson: Trudy Myrrh Reagan. Business address: 967 Moreno Palo Alto, CA 94303. One year membership \$10. TLEM newsletter editor: Suzanne Hicks. Newsletter address: 617-B High St. Palo Alto, CA 94301. Articles, letters to the editor, and artwork are welcome.
 May issue: Cover design: Jenala Donaldson. Graphic design & paste up assistant: C. Terry Rodgers.

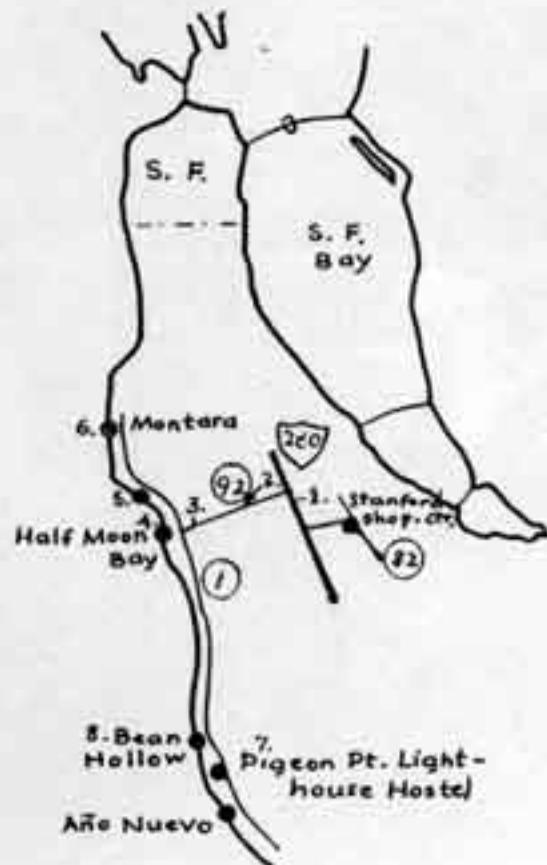
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JUNE 4 AND 5 1983

YLEM GEOLOGY FIELD TRIP

with CLYDE SPENCER, M.A. Geology, San Jose State University

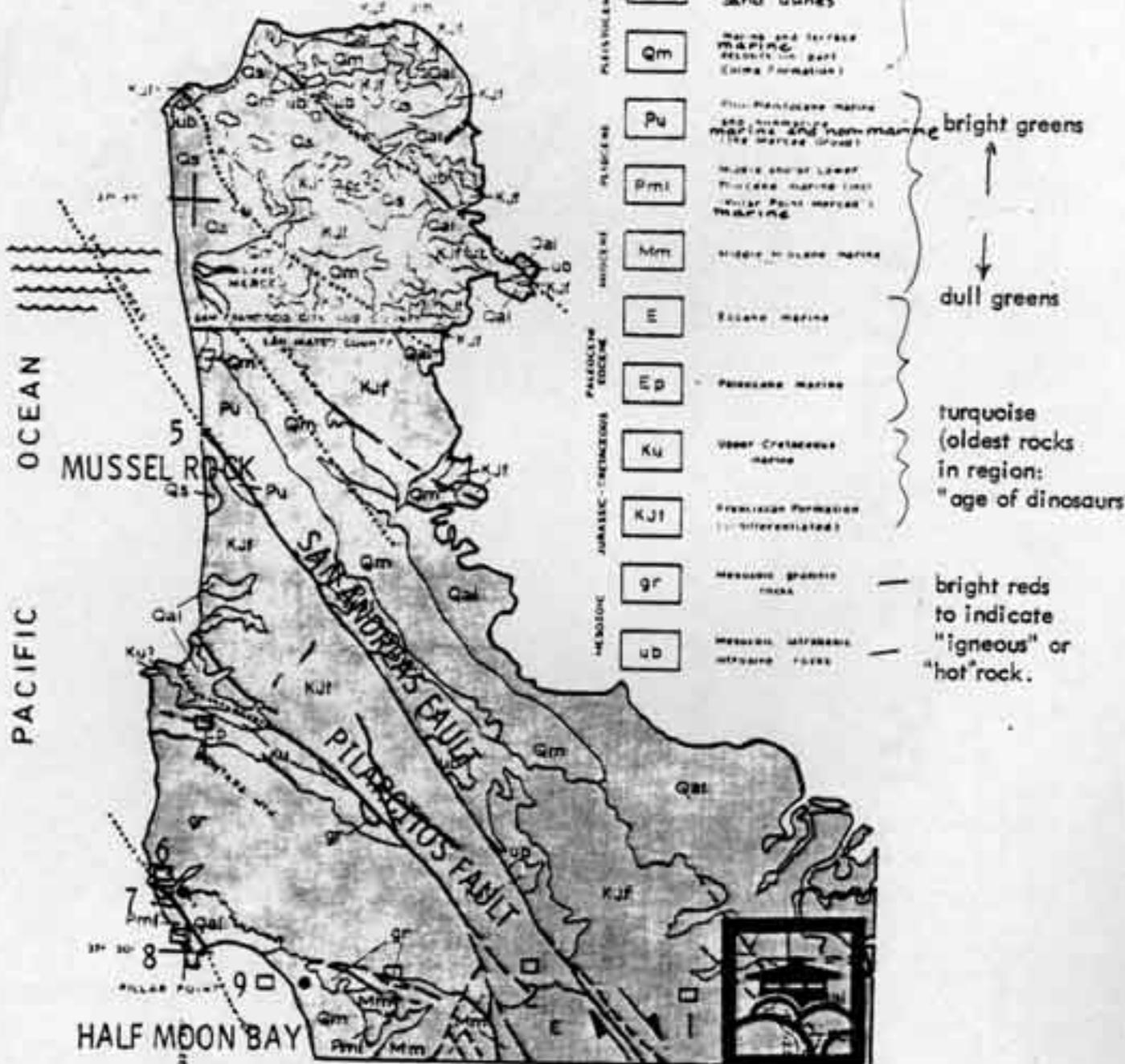


Notes by Trudy Myrrh Reagan © 1983



INDEX MAP

Trudy suggests that you color the area south of San Francisco. The map will make more sense, and it's pretty. Do it like paint-by-numbers.



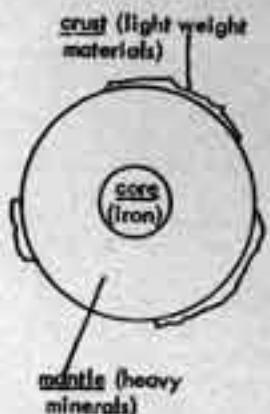
- Stoping localities
- Sandbox stops

This excursion was suggested by a friend of Trudy Myrrh Reagan, Douglas Smith, who teaches art in Bend, Oregon. Every year art and geology students from Bend travel 600 miles south to see Bay Area geology. Later, influences from the trip show up in the art students' work. Often, attractive features in the landscape like the drawing on the cover are the result of an interesting process. We invite you to retrace our footsteps, and have designed the notes and pictures to help you do this. Armchair travellers will also find them of interest. If you go, consult tide tables before departing so that you can arrive at low tide. There isn't enough space to tell of the life we found in the tide pools, but it's easy to find. Do wear sensible shoes and bring a jacket. It may be cold by the coast even in summer.

Leaving Palo Alto, we headed north on I-280 to Farm Hill Blvd. in Redwood City. We headed toward Carmel College, but stopped on the right side of the road about a block before the college entrance. There, in a large road cut, we examined Serpentinite, of which the oily-looking grey-green Serpentine is but one form. Several other forms were available here. Geology concept #1: Most of the rocks on continents are of lighter-weight minerals like silica. These literally float on the heavier minerals which compose the earth's mantle (see diagram). Serpentinite is an exception, being composed of mantle materials. Once, these rocks were dense and dark. Released from the pressure of the deep, and exposed to oxygen in groundwater, these rocks have become light and flaky - a kind of reverse metamorphism. (Most metamorphic rock was crustal material which became buried at high temperature and pressure). How did this get here? It seems to have been extruded upward between weak rocks in the San Andreas Fault Zone. Not far away, is San Andreas Lake, which gives the fault its name. It is one of the bodies of water along the west side of I-280. We returned to I-280 heading north, where we took the Hwy. 92 exit to Half Moon Bay. At the top of the ridge we ignored a vista point turnout on the left, but stopped just past the ridge at a turnout on the right (Figure 1).



Figure 1. On 92 near top of ridge: UPLIFTED OCEAN SEDIMENTS
Diagram: Stream S erodes sediments after each uplift.



CLYDE SPENCER

Skyline Cemetery is seen in the upper right. We gazed at young mountains, marine sediments recently lifted out of the sea in two stages. In the first stage, a stream ("S" in diagram), started running off the surface. Being somewhat above sea level, it possessed potential energy, enabling it to pluck away soil and rocks and to carry them downstream. After much erosion, most of the stream was near sea level, and erosion diminished. A second uplift then occurred, creating a second shelf and eroded zone. We saw these shelves, 1 & 2, on the left.

Proceeding downhill, we passed a spring on the right marked by a sign which is at the Pillarcitos Fault. There are different rock types on either side of the spring. We stopped briefly at Pillarcitos Quarry at the bottom of the hills. We inspected chunks of Montara Granite, which has been pushed north along the fault from Southern California. Granite is mostly composed of lightweight materials, and therefore is crustal rock. Concept #2: Here are some features that geologists notice in the texture of a rock sample: What is the size of the grains? Are the grains interlocked (crystals grown together), or pasted together (sedimentary)? Are recognizable things included like fossils or pebbles? Is it hard or soft? We found that granite has interlocked grains. Much to our surprise, it crumbled! Granite ages and decays like anything else.



Figure 2. Half Moon Bay: BREAKWATER
Diagram: Shows ocean waves from Alaska hitting coast & bouncing off at an angle.

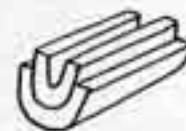
At Hwy. 1 we turned north and stopped at the Breakwater. Figure 2 shows Matthew Isenberg sitting there. (Later he would help us to identify lifeforms in the tidepools). At his back is the area enclosed by the breakwater, which is filling with sand. He is gazing at the other side of it, where the ocean is robbing the shore of sand and threatening to erode away the cliffs upon which Hwy. 1 runs. The reason is this: Waves typically arrive at the coast from the northwest (Alaska). (See diagram). When they hit the shore, they bounce off at an angle, plucking away material and carrying it south. A breakwater disturbs the natural process. The waves can bring in sand from the north and deposit it behind the wall, but cannot remove material. Beyond the breakwater, the waves arrive empty-handed, and can only erode. This was just the first example we were to see of how futile it is to build structures on the coast in ignorance of the ocean's behavior. The political question, said Clyde the Guide, was "Who pays for all this foolishness?" In the distance a radar is shown. The point upon which it stands, like the Montara Granite, was transported from further south.

Heading north on Hwy. 1 we soon came to a sign, "State Wildlife Preserve," and turned left at Virginia (or California) street to reach Moss Beach. In the water there we saw an interesting pattern of rocks. The best view of this was from the neighborhood overlooking the beach. In Figure 3 one sees that it consists of sediments that had been A. deposited, B. folded, C. tilted, and D. eroded (see diagram). Concept #3: Geologists measure the amount of folding and tilting ("strike and dip") of sediments and record this, together with the rock types, on topographic maps. These become geologic maps like the one enclosed. When these are colored, a larger pattern emerges. In the picture, a man is standing by what was, until recently, a 12-foot-high rock.

Figure 3. Moss Beach: FOLDED & TILTED SEDIMENTS



Diagram: Shows sediments
A. deposited



B. folded

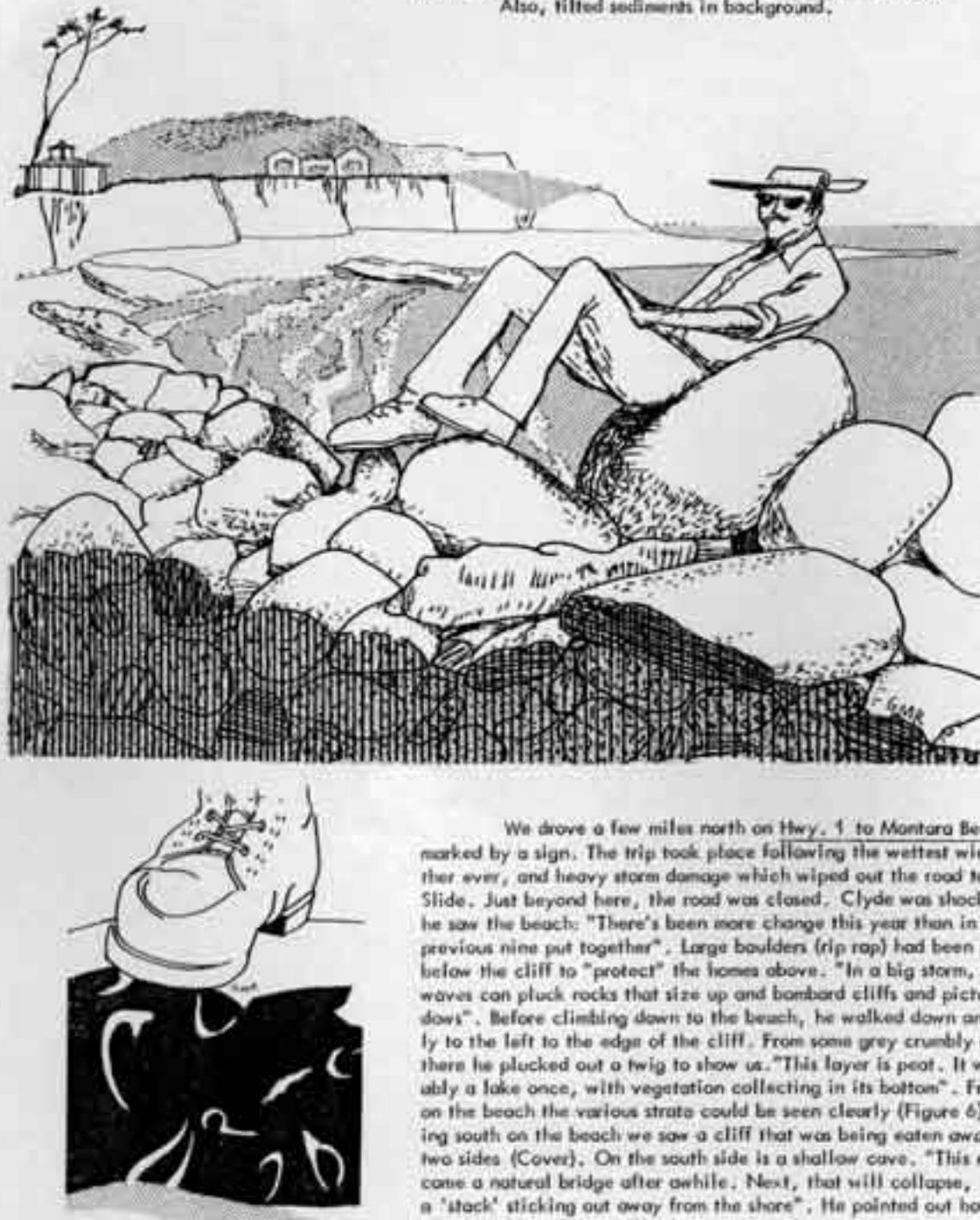


C. tilted



D. eroded

Figure 4. Moss Beach: FAULT IN CONGLOMERATE ROCK
Also, tilted sediments in background.



We drove a few miles north on Hwy. 1 to Montara Beach, marked by a sign. The trip took place following the wettest winter weather ever, and heavy storm damage which wiped out the road to Devil's Slide. Just beyond here, the road was closed. Clyde was shocked when he saw the beach: "There's been more change this year than in all the previous nine put together". Large boulders (rip rap) had been placed below the cliff to "protect" the homes above. "In a big storm, the waves can pluck rocks that size up and bombard cliffs and picture windows". Before climbing down to the beach, he walked down and slightly to the left to the edge of the cliff. From some grey crumbly rock there he plucked out a twig to show us. "This layer is peat. It was probably a lake once, with vegetation collecting in its bottom". From down on the beach the various strata could be seen clearly (Figure 6). Walking south on the beach we saw a cliff that was being eaten away from two sides (Cover). On the south side is a shallow cave. "This may become a natural bridge after awhile. Next, that will collapse, leaving a 'stack' sticking out away from the shore". He pointed out how the strata in the rock were tilted up to the right.

Figure 5. Moss Beach: FOSSIL SHELL FRAGMENTS

We walked north on the beach past big slabs of tilted sediments to a rocky point that seemed to be boulders stuck in concrete (Figure 4). This turned out to be natural: a conglomerate, or "padding-stone", made up of large rocks. On one side the promontory sloped up gradually, but on the other side it was steep. Clyde Spencer is shown sitting near the steep side. Out of view to the left he can see an architect-designed home. "The steep cliff here is a fault line", he told us. "Spencer's First Law: to find the fault, look for the most expensive house". Like artists, starry-eyed home builders find themselves attracted to a quirk in the landscape. Some of these just happen to be faults.

The ocean had obviously been licking at its doorstep, where there was a massive retaining wall. "A temporary fix", he said. "You can see where the waves have eroded behind the wall on each side". On the point we found many tidepools, and fossils (Figure 5).

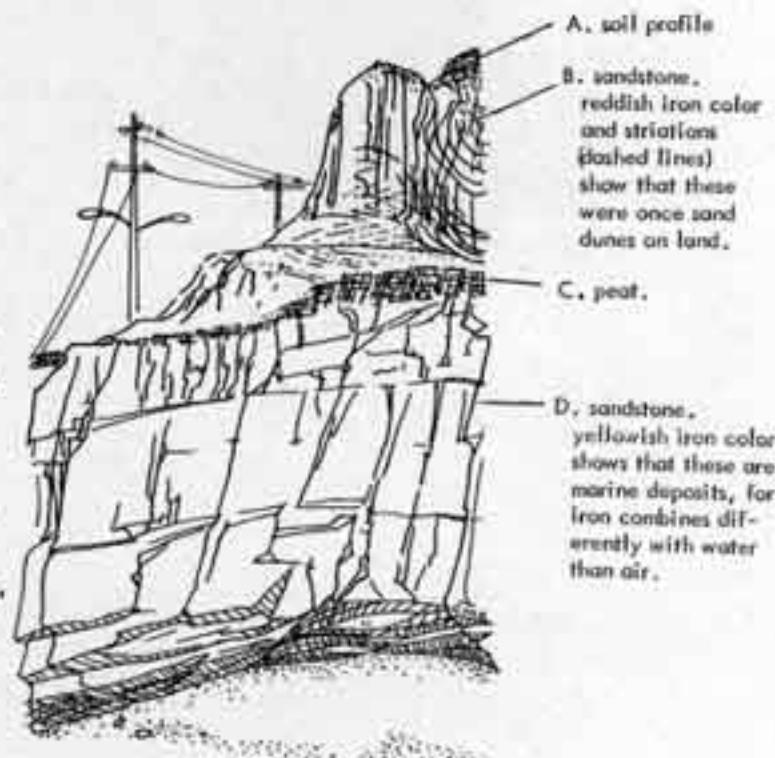


Figure 6. Montara: CROSS SECTION EXPOSED

We spent a jolly night at Pigeon Point Lighthouse Hostel, 20 miles south on Hwy 1, where we augmented our potluck supper with local oysters. You had best call ahead - we had hoped to stay at Montara Hostel, but it was already booked. The origin of the rocks at Pigeon Point is a mystery. Their magnetic measurements do not correspond with those of other western North American rock. Concept #4: The magnetic core of the earth has a polarity that has reversed direction at various points in geologic time (another mystery). If you had been able to stand here in a different geologic era (1), your compass might have pointed south. The orientation of iron particles in rocks correlates with these durable switches, but it has to be used with fossil dating to give a complete picture. If the rocks on the point were sediments with fossils, their age and origin could probably be deciphered. Unfortunately, they are volcanic.

The hostel has a map showing where lattice rock (Figure 7) can be found. This drawing was done at Bean Hollow, a beach just north of Pigeon Point. The best rock is exposed just around the point to the south of the beach. Since the tide was high, we hiked up and over the point to get to them. Clyde pointed out that all these sediments had been upended to a vertical position. At the water's edge the bizarrely eroded rocks challenged us: what were they like originally? Mud cracks? Soft pebbles? Plain sandstone that later developed cracks as it was deformed by pressure? At any rate, the spaces between appear to have filled with dissolved minerals which proved harder than the original rock that has washed away. Judy Levy, a potter in the group, said that she had made molds of the rock by pressing wet clay against it.

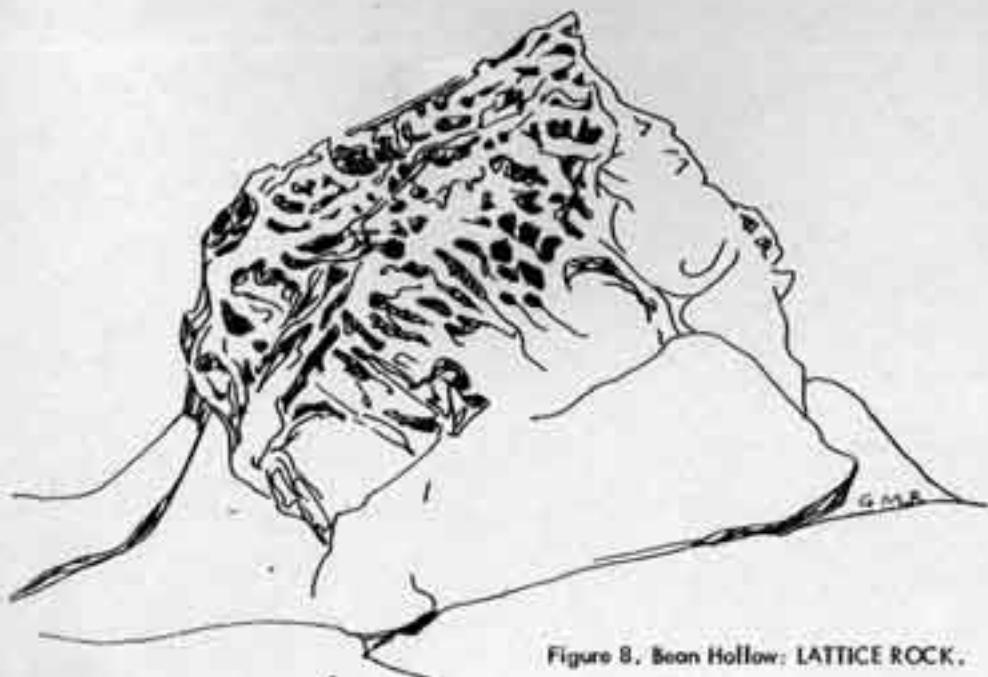


Figure 8. Bean Hollow: LATTICE ROCK.



We questioned Clyde about his habit of mentioning several, sometimes opposing hypotheses. This brings us to another concept, Chamberlain's method of multiple working hypotheses. All scientists have to keep an open mind about what their data imply. Geologists must be aware of this all the more since, in many cases, it is difficult to run to the lab to test them. Rather, they try to hold various theories in their heads as they search the globe for the examples that will lend more credence to one of them.

— Gertrude Myrrh Reagan



ARTISTS USING SCIENCE & TECHNOLOGY

YLEM YELLOW PAGES

THIS QUESTIONNAIRE IS TO FORM A NETWORK OF THE ARTISTS AND THE ARTISTIC RESOURCES OF THE MEMBERSHIP OF YLEM. THE INFORMATION SUPPLIED BY THE MEMBERSHIP WILL BE CONVERTED TO AN UPDATED YLEM YELLOW PAGES CROSS REFERENCED BOTH ARTISTICALLY AND GEOGRAPHICALLY. PLEASE SHOW BELOW ARTISTIC INTERESTS AS WELL AS AREAS OF ARTISTIC NEED. YLEM MEMBERS CAN TAKE ADVANTAGE OF THE ARTISTIC COLLECTIVE RESOURCES OF THE MEMBERSHIP TO CONTACT EACH OTHER TO EXPAND THEIR TECHNOLOGICAL SUPPORT IN DEVELOPING VARIOUS PROJECTS

NAME :----- PHONE #: (---) --- - - -

PROFESSIONAL
NAME :-----

ADDRESS:-----

CITY :----- STATE:-- ZIP:-----

PRIMARY ARTISTIC INTEREST:

(CIRCLE ONE)

CONCEPTUAL ART/ COMPUTER GRAPHICS/ DRAWING/ FILM MAKING/ GRAPHIC DESIGN/ HOLOGRAPHY/ JEWELERY/ LASERS/ LIGHT SCULPTURE/ MUSIC/ MULTIMEDIA/ PAINTING/ PRINT MAKING/ POLYHEDRA/ POETRY/ TEXTILE DESIGN/

OTHER:-----

SECONDARY ARTISTIC INTEREST

(LIST OTHER ARTISTIC INTERESTS IN ORDER OF PREFERENCE 1-4)

CONCEPTUAL ART/ COMPUTER GRAPHICS/ DRAWING/ FILM MAKING/ GRAPHICS DESIGN/ HOLOGRAPHY/ JEWELERY/ LASERS/ LIGHT SCULPTURE/ MUSIC/ MULTIMEDIA/ PAINTING/ PRINT MAKING/ POLYHEDRA/ POETRY/ TEXTILE DESIGN/

OTHERS: 1.-----
2.-----
3.-----
4.-----

STATEMENT OF ARTISTIC PHILOSOPHY: BRIEFLY DESCRIBE YOUR WORK AND/OR IDEAS. (USE A SEPERATE SHEET OF PAPER)

NEED TECHNICAL ASSISTANCE FROM YLEM MEMBERSHIP IN THE FOLLOWING AREAS:

YLEM NOTES

Here it comes, the big question: Should Ylem expand its activities?

Ylem exists for two reasons: to inject into the arts some of the fascinating ideas of science, math, and technology and to help artists whose work embodies these ideas. Study the following services Ylem offers and you will see that both the public and you, the artist, benefit.

- bimonthly newsletter - includes resource list, a calendar of events, and artist's thoughts and work.
- bimonthly seminars - presentations of artists' works, high tech tools, the visual aspects of math and science, and the ideas behind them.
- field trips - to industries, labs, and natural sites.
- exhibitions and performances - opportunities to stage and exhibit our art.
- Ylem Yellow Pages - our latest project will provide us with a source book of Ylem member skills and resources, suggesting possibilities for collaboration.

We're not bragging, but Ylem is a stellar group of artists whose inventive project proposals could probably run circles around those of most other people. Ylem is organizing itself to provide us a better forum to show what each of us can do. Since grants are given to organizations, not individuals, artists with ideas need this kind of support.

PROJECTS UNDER CONSIDERATION

- non profit status - forming a committee to acquire it. This is crucial for obtaining gifts and grants. There is some urgency about this, as opportunities



"The Creature is Consuming Its Environment" c Adell 1981

Carrie Adell, in describing her Bathypelagic (deepest ocean) angler fish, says "a whole extra terrestrial world exists on this earth." In the inaccessible depths, species exist which do not mingle with any in the layers above. An opal triplet 25" high of deep ocean color rests in the mouth of Adell's fish. Its bioluminescent lure is represented by a diamond. The piece is 3 3/4" high.

"Music and Art High School was where it all began," Carrie said. "There I learned to wonder beyond what I could wonder before." She was awarded a scholarship to the Art Students League and later earned her BFA at Hunter College.

Early in her married life she did not see herself as an artist, even though she was working in media and designing her surroundings. At age 31, after her third child, she was challenged by an architect friend who asked, "when are you going to pick a profession?" On the spur of the moment she made an arbitrary choice - jewelry.

"My serious ideas are accidental, always. My tetrahedron series started out as a sudden image of one floating above a freeway in New Jersey. First I get the idea! Then comes what I call the *Zen* - 'being with' - what I am doing 100s as I do repetitive things," Carrie says. "I lose sense of time. Instead of the tool being an extension of my hand it becomes my hand. And the metal tells me what to do next."

may develop with respect to the CADRE conference in Santa Clara during January 1984.

We invite you to use Ylem as a guild and hope that you profit thereby. Our works, infused with important ideas, have a contribution to make to the public. They are too seldom seen, so our job is to gain exposure and acceptance. What we have done already is listed below.

-listed exhibit and commission competitions in the newsletter.

-negotiated a good price on four color printing of postcards. Five artists had their works printed.

-Gallery Sanchez Show. Four Ylem members showed computer art in San Francisco in January 1983.

-multimedia performance - by two Ylem members in February 1983 at the Palo Alto Cultural Center.

We would like to expand our scope to promote Ylem sponsored collaborations with money from grants. This takes work folks! Only with your participation will this be feasible, so come supercharged to the business meeting on May 7. (see calendar for details)

Also, we invite you to participate in the Ylem ferment by contributing artwork, letters and short articles/book reviews to the newsletter. These contributions will give us a better sense of what people think and where we are going with the organization. The more input Ylem gets, the more output you get. So, if you are interested in exhibiting, performing, writing, or helping to develop Ylem, take advantage and we'd love it. Thanks, and happy trails.....

by Louis Brill and Trudy Myrrh Reagan

Questionnaire Starts Yellow Pages Project

The questionnaire enclosed in this newsletter initiates the opening round of the Ylem Yellow Pages. When completed the source book will inform the membership of various networks of contacts and services. The Yellow Pages will also expand opportunities for collaborative projects by cross-fertilizing between the fine arts and the high-tech arts pursued by our group. We urge everyone who has received a questionnaire to fill it out and return it before June 1, 1983, so we can begin the 'exciting task' of building the Ylem data base and setting up for the first issue of our source book.

The Ylem Yellow Pages will be about the membership in more ways than one. We are inviting members to contribute black and white (no gray tones) reproductions of their art; be it computer graphics, line drawings, graphic design or textile patterns. These pictures with credit given to the artist will then be inserted among the data entries to spruce up the Yellow Pages. Some lucky person will also find their image as part of the front cover, so take a chance - you might be surprised.

While assembling the Ylem Yellow Pages is not expected to begin until midsummer, we would like to begin collecting names of people interested in offering their assistance. So indicate on your questionnaire if you would like to help during the final layout or the staple-it-together-parties.

Between printing and postage charges for mailing issue, a substantial outlay will be incurred to present the source book to members. To recoup our financial expenses the Ylem Yellow Pages will be available for purchase at a nominal price. We hope you view the source book as a valuable resource tool in developing both your artistic explorations and expanding your horizons of access to other Bay Area sources for information; be it other groups, persons or accessibility of materials.

We look forward to your support both in answering the questionnaire and contributing artwork. Questions, comments or offers of help will be greatly appreciated, so keep the mail pouring in. Fill it out and send it out. Thanks.

By Louis M. Brill

MARCH 26 YLEM MEETING

At the March 26 Ylem meeting, half of the meeting was devoted to discussing "Finding the Soul in Computer Art". It was led by Robert Dewar and Ken Knowlton, both active in the field since the 1960's. Discussion notes may be obtained by sending a self-addressed stamped envelope to the Ylem address.

Resource List

List of books, articles, and services for artists who use science and technology.
Resource List by: Ishi, Reagan, and Warnick.

Probing the Earth - Contemporary Land Projects - John Beardsley(Smithsonian Institution, 1977, paper, \$6.50) A beautiful catalog of art and land projects in the United States. Describes the work of 10 artists and includes directions of how to go and see them.(Stock #047-003-00051-2).

Mission to Earth - Landsat Views of the World - NASA(SP:360, 1976) A compendium of outstanding Landsat scenes depicting the earth's surface, selected from 100,000 images. Landsat images make it possible to visualize the entire global land surface at a scale and resolution that specify many natural and cultural features with sufficient clarity to be recognized. (Color, \$22, Stock #033-000-00659-4)

Both of the above publications are available at the Federal Building in San Francisco or at Superintendent of Documents, US Government Printing Office, Washington DC 20402.

The Grand Design - Georg Gerster(Paddington Press, 1976, about \$50) Both the skillful aerial photography and the beautiful design and printing of this book make it outstanding. Some of the photographs are contained in a paperback, Flights of Discovery, by the same author and publisher.

Nature Close Up - Andreas Feininger(Dover, 1981) same as the hardback, Mountains of the Mind (Viking, 1976) This Life magazine photographer has an exquisite eye. Shells, micro bone structure, desert erosion and more are presented in 96 photos.

NATURE TO BE COMMANDED (\$16 from the U.S.G.S. Menlo Park, P.I.O. M.S.-33, 345 Middlefield Road; or 555 Battery Street, San Francisco) Earth science maps applied to land and water management. US Geological Paper #950. Lavishly illustrated with colored maps, cross-sections, diagrams and photos, it is designed to inform the public. Purpose: to promote construction only on geologically suitable sites. Nice chapter on our unstable San Mateo County coastline, the area of the Ylem field trip.

THE PHYSICAL GEOGRAPHY OF WILLIAM MORRIS DAVIS(GEOMORPHOLOGY) - Philip King and Stanley Schumm (Geo books, Norwich England, 1980. US distribution by State Mutual books, 521 5th Avenue New York, NY 10017; \$37, also available in paperback). Complete sequences of line drawings of landscapes demonstrate how different types of erosion and mountain building sculpt the landscape. Good for landscape painters, and those who want to visualize the mechanical process shaping the earth.

Encyclopedia of the Butterfly World - Paul Smart(Quality Books, 1981) Two hundred pages, all in color, of butterfly species. Closely related species shown together, which leads one to ponder what brings changes of proportion and design about. Remainedered.

Living Corals - Douglas Faulkner and Richard Cheshire(Crown Books, Distb. 1979) 194 color photos, with extreme close-ups of these exotic forms. Remainedered.

Tip from Janie Warnick - Books Inc. at Stanford Shopping Center has an upstairs room of handsome remainedered books.

Great wall decoration - Geologic maps of states and countries. Usually inexpensive. Rock types shown in vivid color and unexpected patterns. Highly recommended - Geologic Map of Pennsylvania. Available from Topographic and Geologic Survey, Commonwealth of Pennsylvania, Harrisburg, PA.

Displays and exhibits - Minerals - displayed in the lobby of the Earth Science Building, Stanford. Shells - the geology corner of the old Quad, Stanford, houses the Myra Keen Shell Collection. Ask the department secretary.

An outdoor field trip - Try the Coyote Point Museum. Take Peninsula Avenue(just south of S.F. Airport) to Coyote Point Park. Display guides you through the various habitats of plants and animals.

cover artist : Father of Fractals

Guest artist Benoit B. Mandelbrot, the "father of fractals", is an IBM fellow at the Thomas J. Watson Research Center in New York state. His research has concentrated on extreme and unpredictable irregularity in natural phenomena in the physical, social, and biological sciences. Mandelbrot was trained in France. He has pursued diverse interests during his career. For example Mandelbrot has taught economics and mathematics at Harvard. He has also studied meteorology and turbulence. "...I studied turbulence, which is very similar in a certain sense to the stock market, because the weather and the stock market are equally unpredictable, as some people say."

While on sabbatical he was asked to give a talk in Paris as to how his different interests got together. In preparing this lecture, he realized that "everything really hanged around a certain view of chaos and irregularity and of cases where irregularity can be handled, something can be said of it." This lecture in Paris became his first book on fractals.

Why is fractal geometry of interest to artists and designers? Because the concept of fractal shapes provides us with a new perspective for viewing the world. In computer graphics, it is providing a means of describing and producing complex and often beautiful forms which are beyond the capacity of familiar Euclidian geometry.

ABOUT THE COVER: "A Fractal Landscape That Never Was" The fractal model used to generate this mountainous relief is an example of an unsystematic, or random, fractal. Formally, it is a "truncated fractional Brownian surface." Truncated simply means that all points where the model called for altitude below a certain threshold were arbitrarily set to zero. In the illustration these points appear as lakes. Fractional refers to a smoothing operation applied to a rough surface to make it conform more with a natural Earth landscape. Brownian means that each vertical cross section is a Brownian function -- very nearly a random walk that steps up or down with equal probability independently of its past steps.

The design was implemented on computer by Richard F. Voss and was based on ideas of Mandelbrot. From The Fractal Geometry of Nature, by Benoit B. Mandelbrot. Copyright 1977, 1982. Published by W.H. Freeman and Company, San Francisco. (Permission for use of the drawing was obtained by Ylem member Bob Ishi, who was the designer for this book. These biographical notes were also written by Ishi.)

GARAGE SALE MAGIC

The April garage sale made our \$140 deficit vanish, and it sweetened the cauldron by \$92. Trudy says thanks to all who contributed eye of newt and wart of toad to it: Dave Dameron, Joe Villareal, Penny Robertson, Francine Pfeiffer, Dolores Heggie, and Look Twice Co.

FIELD TRIP RESERVATIONS

COMPLETE AND MAIL TO: Ylem, 967 Moreno, Palo Alto, CA 94303. For itinerary see page 1.

NAME: _____

RIDES: TO STANFORD TO BEACH

ADDRESS: _____

I NEED _____

CITY: _____

I CAN OFFER _____

HOME PHONE: _____

NUMBER OF PEOPLE IN PARTY: _____

DAY PHONE: _____

NUMBER OF PEOPLE IN PARTY: _____

Children, who stay with the group, who are quiet during geology talks, and who obey safety rules, are welcome.

IF YOU ARE SPENDING THE NIGHT PLEASE ENCLOSE:

\$6.50 for each adult _____

\$3.25 for each child under
18 with parent _____

CANCELLATION POLICY: \$3 of each person's reservations is non-refundable unless a replacement is found.

FOR FURTHER INFORMATION: Call Donna Van Dijk at (408) 354-4056.

(renewing members fill out other side)

Fill In The Blanks

A strange concatenation of projects has filled this newsletter with empty spaces saying "fill me in by June 1." A few notes about all the blanks are listed below.

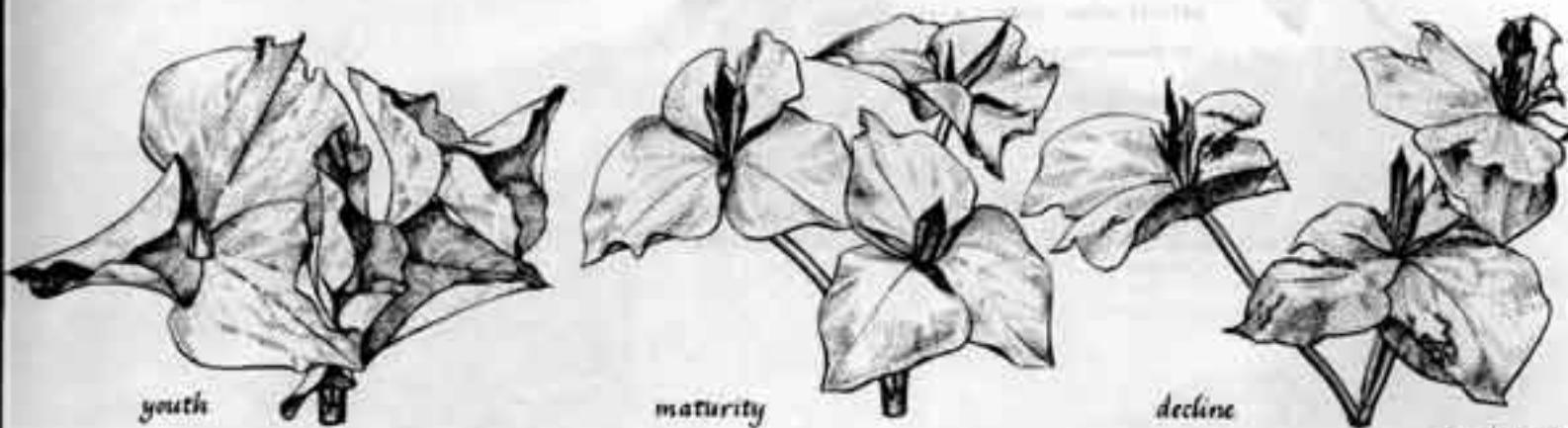
-The field trip: Space is limited, so if you're itching to get down to earth, do this one now.

-Renewals and mailing lists: If a colored envelope was enclosed, it is time to renew. Members renewing by June 1 will be included on next year's mailing list. Anyone unhappy with the way they were listed last year may fill out the subscription blank. Your interests interest us, so please include. Receiving

a mailing list is a membership privilege. The list will arrive about July 1. Please note - people renewing and going on the field trip may fill out both sides of the paper, and send one check to the Palo Alto address.

-Ylem Yellow Pages: This project, which will open marvelous new possibilities for collaborating with each other, has been initiated by Louis Brill. Please complete and return the enclosed questionnaire so that you will be properly listed.

Although this newsletter is called "getting down to earth" the activity that these forms suggest is that Ylem is "getting off the ground" in some new directions. We hope this stimulates you to spend a few minutes to fill in all the blanks.



While Trudy Myrrh Reagan was at Villa Montalvo in Saratoga, CA, she had the pleasure of re-reading The New Landscape by Gyorgy Kepes. She first read the book in 1958 when it had given artistic meaning to the beautiful geologic specimens and maps she was surrounded with as child (her father was a geologist) and the ideas she was learning from her husband-to-be, a physicist. In the book she first encountered the idea that process showed itself as pattern. Now she wants to learn computer animation to make models of process and pattern in action. For example, with this in mind, she did 14 drawings of a Trillium over a six week period at Montalvo. Three of these are shown here. She started Ylem in 1981.

Ylem (Eye-lum): 1. The primordial stuff out of which the universe emerged. 2. An emerging group of artists who believe that science and art enhance each other and human understanding.

The range of works produced by Ylem artists extends from ones representing cosmological and biological subjects to abstract or conceptual works; and from traditional media which are put to new uses to such high-tech media as computer animation and holograms. Aesthetics and perception, the humanistic uses of high-tech equipment, and the changes in paradigm created by science discoveries in this century are of vital interest to Ylem artists.

Ylem offers:

- A newsletter featuring Ylem artists' work and philosophy resource information; events calendar.
- Bi-monthly programs: each features a central topic with artist speakers and people with science information, plus informal sharing and art display. The six meetings a year are held on odd-numbered months, on the Saturday closest to the 20th of the month.

I would like:

() to receive a sample issue.
() a year's membership. \$10 is enclosed.
() newsletter only, since I live more than 100 miles
from both San Francisco and Palo Alto. \$5 is enclosed.

My needs, interests, specialties:

Name _____

Suggestions, other interested artists:

Address _____

City _____ Zip _____

Phone () _____

Send to Ylem, 967 Moreno, Palo Alto, CA 94303



Maudie Church

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